

## A Delicious Relational Soup: The Emerging Integration of Diverse Psychological Theories, Generously Seasoned with Neurobiological Research

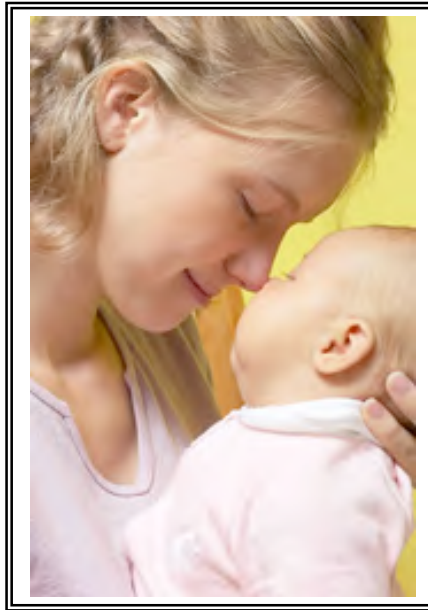
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The twentieth century has been the crucible for the beginnings of a major paradigm shift. We live in a post-Newtonian, relational world. The philosophical shift is best summarized by Heisenberg's Principle of Uncertainty: the location of a sub-atomic particle can only be determined within a prescribed degree of certainty *in relation to the observer*. Relational theories in psychology have proliferated in the wake of this shift. Many believe the hierarchical/objective point of view is giving way to a relational perspective.

An example of this shift is the growing core of people like us who are engaged in a collaborative synthesis in our field, as opposed to the earlier divisive age of competing theories and theoreticians seeking top-dog status. Relational theories, with their rational-scientific underpinnings, suggest that truth and healing emerge in the space created by therapist and patient (Winnicott, 1971), and that therapists transform along with their patients (Stern, 1998). All of this is supported by research that reveals we develop and live in a relational soup (Siegel, 1999).

One of the tangible pieces of evidence for the centrality of relationships in human development is how infants, who have a limited capacity to auto-regulate, rely on the primary caregiver to return them to homeostasis when emotionally overwhelmed by either positive or negative affective states (Beebe & Lachman, 1988). This

gradually developing capacity for self-regulation gives a sense of self-efficacy, leading to an emerging sense of competence. Without it, sound reality testing as well as favorable conditions for learning can be markedly impaired. Within a warm, empathic relationship, children develop the ability to experience the full array of affects and levels of arousal, which are a crucial part of healthy ego development. (Here ego refers to a theoretical construct from psychoanalysis as well as the phenomenological experience of selfhood that may correlate with complex integrative processes in the brain currently being studied) (Schorre, 1997; Siegel, 1999).



Beebe and Lachman's developmental research reveals, through the technologically advanced ability to do frame by frame analysis of mother-child dyadic interactions, that the often used term "mirroring" is inaccurate. Mothers approximate their infants' state and elaborate it, as do the infants in response, in a complex relational dance of

reciprocal influence. For example, a child enters a joy state through a series of interactions that moves affect forward incrementally through the dyadic interaction. Mothers' faces reflect their babies' aliveness, mutually affirming both partners. When infants are ready to return to homeostasis from hyper-aroused pleasure states, good-enough mothers are attuned to cues to disengage. In this process, the window of tolerance for a full range of emotions gradually emerges.

The good news is that, as important as attuned relationships are, perfection is not required. In fact, research reveals none of us spends more than 30% of our time empathically attuned. In optimal relationships, 70% of the time is spent repairing mis-attunements (Tronick, Als, & Adamson, 1979). This process is actually essential for the development of resilience as it builds a mental model, an inner expectation based on repeated experiences in childhood, that when relationships go awry, they will be restored. In contrast, children's healthy development (Winnicott's going-on-being) is disrupted if primary caregivers cannot engage in repair interactions, an inadequacy that is believed to generate shame. In brief, psychobiological attunement is thought to be the process that mediates the attachment bond (Bowlby, 1988). The nature of that bond builds an infant's sense of self-in-relation-to-other-subjects (Benjamin, 1988, 1995).

During the first two years of life, when this primary bond is developing, the brain is growing at the most rapid rate in the entire lifespan. Right hemisphere development, emphasizing relationships, is in the lead until about the third year. Studies of caregivers with their infants reveals that the primary caregiver's capacity for attunement through touch, prosodic vocalization, eye-contact, and especially facial expression facilitates neural connections between the limbic region (emotional brain) and the middle prefrontal areas (a term used by Siegel [2007] to encompass anterior cingulate, orbitofrontal cortex, ventral medial prefrontal and medial prefrontal), particularly in the right hemisphere. The bonding connection is primarily between the caregiver's right brain and the infant's right brain. In essence, the caregiver's right hemisphere, the hemisphere that is dominant for processing non-verbal communication, as well as social and visual information, becomes the template for the child's right hemisphere (Schoore, 1994, 1996, 1997).

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The right prefrontal region, which connects to every other part of the brain, sits at the apex of the limbic system, and may be the primary affective regulatory center in the brain. As a result of repeated attachment experiences, by the first year neurally imprinted circuits of patterned interactions in the dyad become symbolically represented in the right prefrontal region (Schoore, 1994). By 18 months, when the left hemisphere begins developing more rapidly and the capacity for self-awareness arises, these symbolic representations are available to the verbal-thinking brain through the developing corpus callosum. At this stage, children can develop a narrative sense of self-in-relation-to-the-world. This developmental achievement is augmented if their caregivers engage in collaborative narratives with them.

In sum, with good-enough attachment and repair interactions, children feel felt, seen, and understood, developing a positive self-image, a sense of competence, self-efficacy, agency, and safety in relation to the world of others. When these interactions are less than good enough, children shrink

or cling in relationship with others, avoid close relationships, or display a disorganized mixture of all three as a result of fear of being overwhelmed or abandoned. These children suffer from a lack of initiative and competence to engage in pleasurable experiences and interactions with others.

When children are emotionally overwhelmed by a parent, they go into a hyper-arousal state (e.g. activation of the sympathetic nervous system), where their bodies are flooded with adrenaline, cortisol, and other stress hormones. The stress hormones adversely affect neurobiological development and the full expression of genetic potential that would normally be facilitated by substances like dopamine, associated with pleasure states. When infants remain in hyper-aroused states too long, the parasympathetic nervous system activates, shutting down the system, and producing pain-numbing opiates. This energy conservation state of lethargy is a form of escape

when there is no escape. They feel numb, and like our reptilian ancestors, they are hiding from the parent become "predator" by way of immobility (Porges, 1995; Schore, 1997). Schore posits that this neurobiological process may describe the psychological defense mechanism we think of as dissociation, as well as the subjective experience of shame, which is often described as not wanting to be seen. Schore offers a phenomenological description of dissociation as a "dead spot" in the child's consciousness, resulting in the lack of coherence in narrative life histories of some adults.

How may we extrapolate to adult therapy? Many people come to therapy suffering from the neural consequences of such damaging early attachment experiences, often leaving them with a wired-in fear of connecting. Classical conditioning explains the development of cell assemblies in the amygdala and hippocampus accounting for the generalizing and enduring nature of fear responses (Ledoux, 1996). Research and theory suggest that the weakening of such conditioned fear responses is most effective within the context of a relationship with an empathic, modulating other, thereby engaging the regulatory capability of the middle prefrontal region. Strengthening connections between the middle prefrontal and the fear center (the amygdala) enables greater capacity to keep old fear responses in check while expanding the patient's capacity to trust and rely on others.

The possibility of such gains rests on the brain's ability to change (a capacity that is called neural plasticity), especially in the middle prefrontal regions. Does the therapist become the new, more efficacious attachment figure, enabling weak connections between the limbic regions and the middle prefrontal to be strengthened through modified synaptic connections as well as the development of new neurons? (Benis, 1998; Siegel, 1999) In this process, does the therapist's right brain become the new template from which patients pattern their own? We have all seen patients develop broader ranges of affect, new capacities for affect regulation, feelings of greater self-efficacy and agency, and more coherent

narratives of their life story. Are we creating the holding environment (Winnicott, 1965) that enables our patients to develop new mental models that allow them to transition into a new, safer world of others? If so, then it isn't our sage advice, or the brilliance of our interpretations, or even our theories that needs sharpening. In fact, knee-jerk interpretations can be counter-transference defenses against affective states of patients that we fail to recognize we are having difficulty tolerating. A neurobiological way of saying this would be that if we have an historic vulnerability, when our limbic regions resonate with patient's limbic area, automatic defensive behaviors, such as intellectualization, may emerge on our part. This causes a mis-attunement that cuts off patients from moving further into core affect, and thereby closer to their real selves (Fosha, 2000).

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If we ourselves are the instruments of change, then we do not need better techniques. Most of what gets communicated between us and our patients are instantaneous right brain, non-verbal cues and self-object representations (or in neurobiological terms, mental models of interpersonal interactions).

Often insight comes to patients through their experiencing of deepening core affective states resulting from the shared experience with an empathic other (Fosha, 2000). As a guide to the proper moment to venture an interpretation, this model suggests that we contain powerful and overwhelming affects within ourselves and our patients until we are centered, allowing our interpretation to come from physical sensations, images, words, and affects that arise not from our left brain, but from our right. Some say it is our gut feeling that is the somatic marker of the patient's affective state (Damasio, 1994). When therapist and patient are in tune, the insight is often non-verbally shared and may be expressed by either. This attunement determines when it is appropriate to switch to left-brain functioning if at all. Stern (2004) suggests that we need not always put these moments of affective resonance into

words, while Fosha posits that verbal sharing can deepen and consolidate the experience.

Taking the cue from the experience of caregivers and infants, we can expect to be empathically attuned about 30% of the time, so most of our time needs to be spent repairing mis-attunements. We must become skillful at acknowledging within ourselves and to our patients our errors, and work together with them to repair. Within this process, mental models change, and a new template of relational interactions emerges. We will see our patients beginning to seek repair with others, even

as they draw into their lives new people who can offer the same to them. In all likelihood, this signals the maturation of new neural patterns that are now able to emerge and shape relational lives.

Returning to our starting point, I presented the idea proposed by social scientists that a universal

paradigm shift began in the 20<sup>th</sup> century from objective/hierarchical to relational/collaborative modes of thought and action, affecting every facet of life. I have attempted to honor this shift by presenting material using the language and perspective from different psychological schools of thought, and supporting research and theories from the biological sciences (i.e. psychoanalysis, object relations, intersubjectivity, attachment, interpersonal neurobiology, brain research). There are growing numbers of professionals in all of the psychological theoretical schools and in each of the biological sciences that are working in collaboration rather than in isolation or in competition with one another. Consequently, our understanding of ourselves as psycho-biologically integrated beings, inherently connected with each other, has emerged. By working together in this way, we are rapidly advancing our knowledge and ability to heal ourselves, and this healing we now understand takes place most effectively by honoring our interdependence.

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